

Remarks

Claims 1-4, 6, 7, 9, 11, 15, and 25 are pending. Claims 3 and 4 have been cancelled. The dependency of Claim 7 has been amended in view of the cancellation of Claim 4. Claim 1 has been amended. Applicants assert that there is no issue of new matter, as basis for this amendment can be found at least on page 230 of the specification as filed in line 1 (original Claim 2) and line 2 (original Claim 3). "In establishing a disclosure, applicant may rely not only on the description and drawing as filed but also on the original claims if their content justifies it." M.P.E.P. § 608.01(I). A proviso has also been added to Claim 1. Applicants assert that this proviso presents no issue of new matter in view of the alternative elements of A positively recited in the specification. See specification, page 4, line 21 and line 24. Because the alternative elements of A are positively recited in the specification, "they may be explicitly excluded in the claims." M.P.E.P. § 2173.05(i), citing *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977) ("[the] specification, having described the whole, necessarily described the part remaining."). See also *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), *aff'd mem.*, 738 F.2d 453 (Fed. Cir. 1984). Further, Claim 25 has been amended to improve clarity. Additional remarks are provided below.

Claim Rejections – 35 U.S.C. § 112, second paragraph

The Examiner has rejected Claims 1, 7, 11, and 15 as failing to set forth the subject matter which Applicants regards as their invention. More specifically, the Examiner asserts that in Claim 1 variables R4, R5, R6, R7, and R8 are defined but not pictured. Applicants respectfully direct the Examiner to Page 6 of the Preliminary Amendment filed June 13, 2006. This page depicts a portion of the definition for A, and includes moieties with variables R4, R5, R6, R7, and R8 attached thereon. The Examiner has also indicated that is unclear what the variable R4 is drawn to in Claims 7, 11, and 15. As mentioned above, R4 is defined and depicted in Claim 1. Claim 7, is dependant on Claim 2, which in turn is dependant on Claim 1. In view of the information above regarding the depiction of R4 in Claim 1, applicants assert that Claim 7 is no longer unclear. Similarly, dependant claims 11 and 15 no longer are ambiguous in view of the information. Applicants thus respectfully request withdrawal of this rejection.

Claim Rejections – 35 U.S.C. § 101

The Examiner has rejected Claim 25 as claiming a use without setting forth any steps involved in the process, thus resulting in an improper definition of a process. Applicants assert

that Claim 25, as amended, sets forth the use of a compound according to Claim 1 for use as a pharmaceutical. Because Claim 25 recites a use and sets forth the steps involved in the process, Claim 25 properly defines a process and thus satisfies the requirements of 35 U.S.C. § 101. Applicants respectfully request allowance of Claim 25.

Claim Rejections – 35 U.S.C. § 112, second paragraph

The Examiner has rejected Claims 1-4, 6, 9, 11, and 15 under 35 U.S.C. § 112, first paragraph, arguing that the specification, while being enabling for a limited class of compounds of the formula I, does not reasonably provide enablement for the plurality of general structures claimed. The Examiner did note, however that “[t]he specification is enabling for making any compounds wherein X = S...” Office Action dated December 4, 2007, Page 3. In order to advance prosecution, Applicants have amended Claim 1 to encompass only those compounds wherein X=S. In view of this amendment, Claims 3 and 4 have been cancelled.

The specification must describe the invention in such a manner as to “enable any person skilled in the art...to make and use the [invention].” 35 U.S.C. § 112, first paragraph. Additionally, a skilled artisan must be able to make and use the invention “without undue experimentation.” *In re Wands*, 858 F.2d 731, 737, 8 USPQ2D 1400, 1404 (Fed. Cir. 1988). However, § 112, first paragraph does not require the specification to contain information that is well known in the art. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). Factors that may be considered when determining whether any necessary experimentation is undue include: 1) the breadth of the claims, 2) the nature of the invention, 3) the state of the prior art, 4) the level of one of ordinary skill, 5) the level of predictability in the art, 6) the amount of direction provided by the inventor, 7) the existence of working examples, and 8) the quantity of experimentation needed to make or use the invention based on the content of the disclosure. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). The relevant factors are addressed below.

1) Breadth of the claims and 2) Nature of the invention

The instant invention is drawn to chemical compounds that are potentiators of glutamate function, and thus useful for treating a variety of conditions.

6) Amount of guidance/working examples

The Examiner asserts that the guidance and working examples provided by Applicants is limited. However, as the Examiner noted, “[t]he direction provided in the specification is

enabling for making many thiophene compounds wherein R2 is COOH....” Office Action dated December 4, 2007. Applicants note that they have restricted the scope of Claim 1 to those compounds wherein R2 is COOH.

The Examiner stated in the Office Action dated December 4, 2007 that Applicants have not provided biological activity. To establish enablement, all that is required is a reasonable correlation between a biological activity and the asserted use. *Nelson v. Bowler*, 626 F.2d 853, 857, 206 USPQ 881, 884 (CCPA 1980). *See also* MPEP § 2107.03. Applicants have stated in the specification on Page 212, line 2, that “the ability of compounds of Formula I to potentiate glutamate receptor-mediated response can be determined by one of ordinary skill in the art.” Applicants then continue on to explain a procedure useful for determining whether compounds potentiate glutamate receptor-mediated responses. This information enables the skilled artisan to determine the ability of compounds of the present invention to potentiate glutamate receptor function. Moreover, the skilled artisan appreciates that compounds potentiate glutamate receptor function are useful in the treatment of a variety of disorders, including the disorders listed on page 20, lines 1-16 of the specification. Applicants are not required to place in the specification that which is well-known in the art. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). Thus, applicants have provided sufficient guidance and examples in the specification to enable one of ordinary skill in the art to make and use the instantly claimed compounds.

8) Quantity of experimentation needed

In view of the abundance of guidance and teaching providing in the specification, and the lack of necessity to recapitulate information known to the skilled artisan, the quantity of experimentation needed to make and/or use the present invention is not undue.

Considering the above-stated remarks and amendments, Applicants assert that Claims 1, 2, 6, 9, 11, and 15 are enabled and thus comply with the requirements set forth in 35 U.S.C. § 112, second paragraph. Accordingly, allowance of these claims is respectfully requested.

Claim Rejections – 35 U.S.C. § 102

The Examiner has rejected Claims 1 and 9 under 35 U.S.C. §102(b) as being anticipated by Augustin et al.. The Examiner has also rejected Claim 1 under 35 U.S.C. §102 (a) and (e) as being anticipated by Reux et al.. In addition, the Examiner has rejected Claims 1-3 under 35 U.S.C. §102(b) as being anticipated by Abdulla et al..

35 U.S.C. § 102 states in relevant parts that a person shall be entitled to a patent unless:

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or...
- (c) the invention was described in - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent

Moreover, a genus is considered anticipated if a previously disclosed species falls within the scope of the genus. *In re Slayter*, 276 F.2d 408, 411, 125 USPQ 345, 347 (CCPA 1960).

Applicants respectfully assert that the claims as currently amended are not anticipated by either reference.

The Examiner asserts that Claims 1 and 9 is appropriately rejected as anticipated by compounds disclosed in Augustin et al., and Claim 1 is appropriately rejected in view of compound disclosed in Reux et al.. Both Augustin et al. and Reux et al. describe compounds where R2 is CN. Applicants have amended the claims of the present invention to include only those compounds wherein R2 is COOH. Thus compounds disclosed in Augustin et al. and Reux et al. do not fall within the scope of Claims 1 and 9 as amended. As such, allowance of these claims is respectfully requested.

The Examiner has also rejected Claims 1-3 as being anticipated by Abdulla et al.. Claim 3 has been cancelled, and thus Applicants respond to this rejection as it relates to Claims 1 and 2. The Examiner asserts that Abdulla et al discloses several compounds of formula I, namely those wherein R1 is SCH3, R2 is COOH and A is C1-alkyl. In an effort to advance prosecution, Applicants have amended Claim 1 such that when R1 is S(1-4C)alkyl, A is not CF₃, -(1-6C)alkyl, or -(1-4C)alkoxy. As such, the compounds disclosed in Abdulla et al. do not fall within the scope of Claim 1 as amended, and thus do not fall within the scope of dependant Claim 2. In view of this amendment, Applicants respectfully request allowance of Claims 1 and 2.

Priority

Applicants respectfully request acknowledgment of foreign priority and receipt of the foreign priority documents. This is the national phase application, under 35 U.S.C 371, for PCT/US2005/000004, filed 01 January 2005, which claims the benefit under 35 U.S.C. 119 of EP 04380005.1 filed 9 January 2004, and of US provisional application 60/552,080, filed 10 March 2004. Applicants assert that they have complied with the provisions of 35 U.S.C 371

and 35 U.S.C 119, See File History, and are thus entitled to claim the benefit of priority of the above-referenced applications.

Applicants respectfully request entry of the amendments to the claims described above. In addition, in view of the amendments and arguments presented above, applicants respectfully request allowance of the pending claims. Moreover, applicants respectfully request acknowledgement of priority in view of the above discussion. Should the Examiner have any questions about the pending application, please do not hesitate to contact the undersigned at the number provided below.

Respectfully submitted,

/Tonya L. Combs/
Tonya L. Combs
Agent for Applicants
Registration No. 57,909
Phone: 317-651-1266

Eli Lilly and Company
Patent Division
P.O. Box 6288
Indianapolis, Indiana 46206-6288

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